UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,588	10/23/2001	Michael Kenneth Brown	401052-A-01-US(Brown)	6479

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EXAMINER
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ART UNIT	PAPER NUMBER
2645	

DATE MAILED: 01/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/037,588	BROWN ET AL.
	Examiner	Art Unit	
	Joseph T Phan	2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _10 October 2004_.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-19 and 21-30_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-19 and 21-30_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

    1. ☐ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____.

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claims 1, 17, 27 objected to because of the following informalities: Applicant

replaces the phrase "a presence of tones" in claims 1 and 17 and "detecting tones" in

claim 27 with the term "identification of tones" and "identifying tones" respectively. It is

noted that applicant's specification uses the term "detecting" when referring to tones

and "identifying" when referring to vectors and carriers. Therefore for consistency and

clarification, the term "detecting" should be used with 'tones' in the claims. Appropriate

correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claims 1, 11, and 17 rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Claim 1 lines 6-8, claim 11 line 8, and claim 17 lines 9-12 recite the newly added

limitation of "analyzing using automatic speech recognition analysis calculations…the

received audio information for tones…" Applicant's specification teaches that an

Automatic Speech Recognition Unit includes a tone detector to perform detection of

tones(page 17 line 12-page 18 line 18) and not specifically using 'speech recognition

analysis calculations' analysis to perform the detection of tones. Applicant's

specification (page 12 line 10-page 13 line 18 teaches that 'Speech recognition' is used

to recognize and interpreting words, phrases, etc. in speech. Speech recognition

analysis calculations can not be found and therefore makes the claims indefinite as

examiner interprets this as still using the method of speech recognition which was

previously rejected as not enabling. Applicant's specification does not enable and

disclose how using speech recognition analysis(eg. Hidden Markov Model) is able to

analyze tones. Applicant's 'tone detector' within a speech recognition unit enables the

analysis(page 17 line 12-page 18 line 18).

For clarification, Examiner recommends reciting the phrase to "..analyzing using

automatic speech or tone recognition the received audio information..." or revise the

claim language similar to claim 27. See also examiner's response to applicant's

arguments section below for further detail.

Appropriate clarification or correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5, 11, 17-19, 21, and 27-30 rejected under 35 U.S.C. 102(b) as being

anticipated by Solot, Patent #5,644,625.

Regarding claims 1 and 17 Solot teaches a method for doing call classification on

a call to a destination endpoint, comprising the steps of:

receiving audio information from the destination endpoint(col.2 lines 3-19) and analyzing

using speech recognition analysis calculations the received audio information for a first

type of classification(col.5 lines 31-62);

analyzing using the automatic speech recognition analysis calculations the

received audio information for a second type of classification wherein the second type of

classification is for identification of tones(col.5 lines 31-62) and

determining a call classification for the destination endpoint in response to the analysis

of the first type of classification and the analysis of the second type of classification

(col.5 lines 1-4, 31-62 and col.6 lines 20-25).

Regarding claims 2 and 18, Solot teaches the method of claims 1 and 17 wherein

the analysis for the first type of classification is analyzing the audio information for

words (col.2 lines 3-19 and col.6 lines 1-36; one number announced is a word)

Regarding claim 3 and 19, Solot teaches the method of claims 2 and 18 wherein

the analyzed words are formed as phrases words (col.2 lines 3-19 and col.6 lines 1-36;

the telephone number is a phrase).

Regarding claim 4 Solot teaches the method of claim 2 wherein the analysis for

the second type of classification is analyzing the audio information for identifying a set

of tones (col.5 lines 1-4 and 31-62).

Regarding claims 5 and 21 Solot teaches the method of claims 4 and 18 wherein

the step of receiving audio information further comprises detecting speech or tones in

the audio information(col.5 lines 1-4, 31-62 and col.6 lines 20-25).

Regarding claim 11 Solot teaches a method for doing call classification on a call

to a destination endpoint, comprising the steps of:

receiving audio information from the destination endpoint(col.2 lines 3-19) and detecting

speech or tones in received audio information, analyzing using automatic speech

recognition the received audio information for words in response to the detection of

speech and analyzing using automatic speech recognition the received audio

information for identification of tones in response to the detection of tones (col.5 lines

31-62);

determining a call classification for the destination endpoint in response to the analysis

of words or the analysis of tones (col.5 lines 1-4, 31-62 and col.6 lines 20-25).

Regarding claim 27, Solot teaches a call classifier for determining the call

classification of a called destination endpoint, comprising:

an automatic speech recognizer for detecting first characteristics in audio information

received from the called destination endpoint, the automatic speech recognizer further

identifying tones in the audio information received from the called destination

endpoint(col.5 lines 1-4, 31-62 and col.6 lines 20-25);

and inference engine for classifying the call in response to the automatic speech

recognizer *(Fig.1 items 5 and 13 and col.5 lines 31-62; the voice recognition board with*

the computer is an inference engine which infers by a confidence level what the word

announced is).

Regarding claim 28, Solot teaches the call classifier of claim 27 wherein the first

characteristics are words (col.2 lines 3-19 and col.6 lines 1-36; one number announced

is a word).

Regarding claim 29, Solot teaches the call classifier of claim 28 wherein the

words are formed into phrases (col.2 lines 3-19 and col.6 lines 1-36; the telephone

number is a phrase).

Regarding claim 30, Solot teaches the call classifier of claim 28 wherein the

second characteristics are tones (col.5 lines 1-4 and 31-62).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-10, 12-16, 22-26, and 31 rejected under 35 U.S.C. 103(a) as being

unpatentable over Solot in view of Trandal et al., Patent #6088428.

Regarding claims 6, 8, 12, 14, 22, 24, and 31, Solot teaches the methods and

call classifier of claims 5-6, 11-12, 21-22, and 30 wherein the step of analyzing for the

first and second types of classification is responsive to the detection of speech and/or

tone in the audio information.

Solot is silent on executing a Hidden Markov Model to determine the presence of

words or tones in the audio information.

Trandal, as best understood due to the 112 issues above, discloses using a

Hidden Markov Model to determine the presence of words and/or tones in audio

information (col.8 lines 16-25 and col.23 lines 17-28)

At the time the invention was made, it would have been obvious to a person of

ordinary skill in the to use the Hidden Markov Model as taught by Trandal to determine

the presence of words or tones. One of ordinary skill in the art would have been

motivated to do this because the Hidden Markov Model is a common and well-known

algorithm for recognizing speech as disclosed in Solot's speech recognition system.

Regarding claims 7, 13, and 23, Solot teaches the methods of claims 6, 12, and

22 wherein the step of executing comprises the step of using a grammar for speech

(col.5 lines 1-4, 31-62 and col.6 lines 20-25).

Regarding claims 9, 15, and 25, Solot teaches the method of claims 8, 14, and

24 wherein the step of executing comprises the step of using a grammar for tones(col.5

lines 1-4, 31-62 and col.6 lines 20-25).

Regarding claims 10, 16, and 26, Solot teaches the method of claims 8, 14, and

24 wherein the step of determining comprises the step of executing an inference engine

(Fig.1 item 13, col.5 lines 1-4, 31-62 and col.6 lines 20-25; the voice recognition board

is an inference engine which infers by a confidence level what the word announced is).

Response to Arguments

5.   Applicant's arguments filed 10/10/04 have been fully considered but they are not

persuasive. Foremost, for clarification in applicant's arguments page 12, Examiner

agreed in the advisory action that applicant's automatic speech recognition(ASR)

unit/engine analyzes the presence of tones not the speech recognition method itself

because applicant's ASR <u>unit/engine</u> includes a tone detector which performs the tone analysis.

Applicant states in arguments that blocks 1111-1116 of Fig.11 and accompanying text of specification (page 26, line 25-page 27 line 3) and Fig.12-13(page 27 lines 13-20) teaches that HMM analysis is used for identification of tones. Examiner respectfully disagrees as these references by the applicant comes after the result of tone detection (see step 804 of Fig.8; specification page 24 lines 9-22) and therefore HMM analysis is not used for tone detection, the result of the tone detection is inputted to the HMM analysis along with the speech. Tone detection methods by way of frequency and timing patterns is taught on page 17 line 12-page 18 line 18 of specification.
Solot uses an automatic speech recognition system that includes speech recognition(units 5 and 11-13 of Fig.1) to analyze the received audio information for speech and for the presence of tones(col.5 lines 31-62) and therefore reads on the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph T Phan whose telephone number is 703-305-3206. The examiner can normally be reached on M-TH 9:00-6:30, in every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on 703-305-4895. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

JTP
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